



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

AS

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/892,902	07/14/97	WALLER	C 53473USA1A

IM22/0213

JOHN H HORNICKEL
3M OFFICE OF INTELLECTUAL
PROPERTY COUNSEL
P O BOX 33427
ST PAUL MN 55133-3427

EXAMINER

YAMNITZKY, M

ART UNIT	PAPER NUMBER
----------	--------------

1774

23

DATE MAILED:

02/13/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/892,902

Applicant(s)
Clinton P. WALLER Jr. et al.

Examiner
M. Yamnitzky

Group Art Unit
1774



☒ Responsive to communication(s) filed on Nov 20, 2000 (and 06/02/00, 07/28/00 and 01/23/01).

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three (3) month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1, 5, 10-14, 16, 18, 19, 21-35, and 37-43 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☒ Claim(s) 1, 5, 10-14, 16, 18, 19, 21, 23, 24, and 41-43 is/are allowed.

☒ Claim(s) 22, 25-35, and 37-40 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 15, 16, 20 and 22 (5 pages total)

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 1774

1. This Office action is in response to applicants' amendment received 11/20/00 (Paper No. 21) which amends the specification, cancels claim 36, amends claims 1, 16, 18, 19, 22, 25, 29-31 and 33-35, and adds claims 37-43.

Claims 1, 5, 10-14, 16, 18, 19, 21-35 and 37-43 are pending.

2. The rejection of claims 22 and 25-36 under 35 U.S.C. 112, second paragraph, as set forth in Paper No. 14, is overcome by applicants' deletion of the term "inorganic" from the phrase "inorganic multivalent metal salt" in the claims and specification.

The rejection of claims 22, 25-34 and 36 under 35 U.S.C. 103(a) as unpatentable over Cousin et al. (4,554,181), as set forth in Paper No. 14, is overcome by applicants' amendment of claims 22 and 33. Cousin et al. teach that the recording sheet may comprise a cationic or non-ionic surfactant; no mention is made of an anionic surfactant. It is reasonable to expect that an anionic surfactant would not be suitable for Cousin's recording sheet because an anionic surfactant would be expected to interfere with Cousin's required cationic polymer having cationic groups which are available in the recording surface for insolubilizing an anionic dye.

3. Applicants should receive copies of signed forms PTO-1449 as attachments to this Office action showing that the examiner has considered, and made of record, the references disclosed by the Information Disclosure Statements filed 06/02/00, 07/28/00, 11/20/00 and 01/22/01 (Paper Nos. 15, 16, 20 and 22, respectively) with the exception of EP 457 728 which is not in English

Art Unit: 1774

and for which no statement of relevance was provided. The Porterfield (Inorganic Chemistry) reference has been considered but is crossed off the PTO-1449 received 06/02/00 because the reference was previously made of record (see the PTO-1449 signed 10/07/99 by the examiner).

In addition to the references listed on the forms, Paper No. 15 also discloses four copending applications. Three of the copending applications are being examined by the undersigned examiner, and the fourth application is abandoned.

4. Claims 1, 5, 10-14, 16, 18, 19, 21, 23, 24 and 41-43 are allowed.

Claims 1, 5, 10-14, 16, 18, 19, 21, 23 and 24 were allowed in Paper No. 14. Of these claims, independent claims 1 and 16 are amended by applicants in Paper No. 21 to delete language describing a function of the surfactant of the claimed inkjet receptor medium, claim 18 is amended in Paper No. 21 to delete language describing how components of the ink used in the claimed method are affected by components of the inkjet receptor medium used in the method, and claim 19 is amended in Paper No. 21 to delete language further defining a function of the functionalized particulates of the inkjet receptor medium used in the method. These changes do not alter the examiner's position that these claims are allowable. However, for the record, the examiner interprets the claim limitations of functionalized particulates and surfactant in light of the specification and the fact that the functionalized particulates required by claims 1, 5, 10-14, 16, 18, 19, 21, 23, 24 and 43 are claimed as a component of a pigment management system and the surfactant required by these claims is claimed as a component of a fluid management system.

Art Unit: 1774

5. Claims 30, 37 and 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitations of claim 30 are unclear. It is uncertain if the silicon-based non-ionic surfactant which the medium further comprises according to claim 30 is in addition to the surfactant of the fluid management system according to claim 1, or if claim 30 is requiring that the surfactant of the fluid management system comprise a silicon-based non-ionic surfactant. If the latter interpretation is correct, then claim 30 is a substantial duplicate of claim 13:

Claim 37, with claim 38 dependent therefrom: The scope of "functionalized particulates" is not clear. It is not clear how the particulates are "functionalized". It is not clear if this language requires the particulates to have a specific function and, if so, what that function is. Although the original application discloses a pigment management system comprising functionalized particulates, claims 37 and 38 do not require the functionalized particulates to be part of a pigment management system. It is not clear if the functionalized particulates of claims 37 and 38 must function as (or as part of) a pigment management system, or if the functionalized particulates may serve other undisclosed functions.

6. Claim 37 is rejected under 35 U.S.C. 102(b) as being anticipated by Cousin et al. (4,554,181).

Art Unit: 1774

Cousin et al. disclose an ink jet recording sheet comprising a porous substrate and a polyvalent metal salt. To enhance water absorbancy, "high absorbancy pigments" may also be included in the ink jet recording sheet. These "high absorbancy pigments" are considered to meet the limitation of "functionalized particulates" as required by present claim 37. Cousin et al. also teach that cationic or non-ionic surfactants may be included in the recording surface so as to increase the speed with which the ink wets the surface, and enhance rapidity of set and enhance absorption. For example, see column 2, lines 38-51, c. 5, l. 30-31, c. 6, l. 12-28, and c. 8, l. 26-36.

7. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cousin et al. (4,554,181) as applied to claim 37 above and for the further reasons set forth below.

The disclosure of the patent to Cousin et al. is as set forth in the rejection under 35 U.S.C. 102(b).

Cousin et al. do not disclose a pigmented ink image on the recording sheet. Pigmented inks are known in various forms (e.g. pigmented ink jet inks and pigmented ball point pen inks). It would have been an obvious modification to one of skill in the art at the time of the invention to print an image on the prior art recording sheet by using a pigmented ink. One of ordinary skill in the art would have reasonably expected that a recording sheet such as a porous paper as disclosed by Cousin et al. could accept a pigmented ink image.

Art Unit: 1774

8. Claims 37 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Malhotra et al. (5,500,668) as evidenced by Carreira et al. (5,220,346).

The patent to Carreira et al. is totally incorporated by reference by Malhotra et al. (see column 26, lines 26-29 of the Malhotra patent).

Malhotra et al. disclose a recording sheet made by applying a composition to a substrate which is preferably porous (c. 12, l. 17-22). Application of the composition to a porous substrate will inherently bring the components of the composition in contact with surfaces of the pores of the substrate.

Malhotra et al. teach that the composition may comprise betaine (c. 25, l. 1-13). Betaine is a surfactant.

Malhotra et al. teach that the composition may comprise filler components (c. 24, l. 43-67). These filler components are considered to meet the limitations of "functionalized particulates" as required by present claims 37 and 38.

Regarding claim 38's requirement for a pigmented ink image, Malhotra et al. teach that the recording sheets may be employed in ink jet printing processes such as the process disclosed in the Carreira patent, and may be used in other printing and imaging processes. The inks used by Carreira et al. may be pigmented inks (e.g. see c. 6, l. 47 to c. 7, l. 57). In addition, any of the other processes disclosed at c. 26, l. 30-35 of the Malhotra patent wherein a pigmented ink is used would provide a pigmented ink image on the receptor medium as required by claim 38.

Art Unit: 1774

9. Claims 22, 25-29, 31-35, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malhotra et al. (5,500,668) in view of Carreira et al. (5,220,346) and Kojima et al. (5,677,067).

The patent to Carreira et al. is totally incorporated by reference by Malhotra et al. (see column 26, lines 26-29 of the Malhotra patent).

Malhotra et al. disclose a recording sheet comprising a salt of a metal cation and an acid anion. Various multivalent metal cations are taught at c. 12, l. 49-57. Counterions (anions) of the group set forth in present claim 25 are disclosed by Malhotra et al. (e.g. see c. 12, l. 58 - c. 13, l. 1 and c. 14, l. 18).

The composition comprising the salt may be applied to various substrates including paper and Teslin™, available from PPG industries (e.g. see c. 11, l. 28-56) in order to make the recording sheet. Malhotra et al. teach that the substrate is preferably porous (c. 12, l. 17-22). Application of the composition comprising the salt to a porous substrate will inherently impregnate the salt into pores of the porous substrate. It is the examiner's understanding that microporous polypropylene membranes are sold under the tradename of "Teslin".

Malhotra et al. teach that the composition may also comprise betaine. For example, see c. 25, l. 1-13. Betaine is a surfactant, though not an anionic surfactant as required by the present claims. The use of anionic surfactants instead of, or in addition to, a surfactant such as betaine was known in the art at the time of the invention as demonstrated by the patent to Kojima et al.

Art Unit: 1774

Kojima et al. disclose ink jet recording sheets and disclose the use of surface active agents. Kojima et al. teach that the "surface active agents may be any of anionic type, cationic type, nonionic type and betaine type" and teach that two or more surface active agents may be used in combination (e.g. see c. 4, l. 27-39). Absent a showing of criticality for an anionic surfactant, and absent a showing of superior/unexpected results associated with the use of an anionic surfactant versus other types of surfactants, it is the examiner's position that it would have been within the level of ordinary skill of a worker in the art at the time of the invention to include additional additives known in the art in Malhotra's recording sheet. In addition, the examiner notes that while Malhotra et al. do not explicitly teach the use of an anionic "surfactant", Malhotra et al. do not exclude the use of an anionic surfactant. Some of Malhotra's monomeric salts are known anionic surfactants (e.g. dioctyl sulfosuccinate sodium salt - disclosed by Malhotra et al. at c. 17, l. 44-45).

In addition, impregnation of an ink containing an anionic surfactant into the pores of a porous substrate would inherently impregnate the pores with an anionic surfactant. Carreira et al. disclose ink jet inks and printing processes using the inks. Carreira's inks may be pigmented inks (e.g. see c. 6, l. 47 to c. 7, l. 57) and may also contain surfactants which may be cationic, anionic or nonionic (see c. 7, l. 58 to c. 8, l. 6). Malhotra et al., in incorporating the Carreira patent by reference, clearly suggest (if not anticipate) impregnation of the pores of the substrate with a pigmented ink containing an anionic surfactant.

Art Unit: 1774

A "Teslin" substrate, disclosed by Malhotra et al., is considered to meet the additional limitations of claims 26-28 and 32. Claims 27, 28 and 32 limit the membrane to a membrane made by a specific method. The method limitations do not patentably distinguish the membrane from microporous membranes sold under the tradename of "Teslin" absent a showing of differences in the membrane itself. Even if there are differences between microporous membranes sold under the tradename of "Teslin" and a microporous membrane as required by claims 27, 28 and 32 (other than differences in method of production), the porous membranes required by the present claims are commercially available. It would have been within the level of ordinary skill of a worker in the art at the time of the invention to select a suitable porous substrate from commercially available substrates based on the properties that a particular porous substrate would lend to the final product.

With respect to present claims 34, 35 and 40, Malhotra et al. clearly suggest (if not anticipate) the limitations of an image formed from pigmented ink, and a method in which a pigmented ink is delivered to a receptor medium. The Malhotra patent incorporates by reference the Carreira patent and, as previously noted, Carreira et al. disclose pigmented ink jet inks and ink jet printing processes using such inks. In addition, Malhotra et al. teach that the recording sheets can be used in other printing processes such as "printing with pen plotter, handwriting with ink pens, offset printing processes" (c. 26, l. 30-35). Any of these processes wherein a pigmented ink is used would provide a pigmented ink image on the receptor medium as required by claim 40.

Art Unit: 1774

10. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (703) 308-4413. The examiner can generally be reached at this number from 6:45 a.m. to 3:15 p.m. Monday-Friday.

The current fax numbers for Art Unit 1774 are (703) 305-3599 for official after final faxes and (703) 305-5408 for all other official faxes. (Unofficial faxes for Art Unit 1774 can be sent to (703) 305-5436.)

MRY
02/08/01



MARIE YAMNITZKY
PRIMARY EXAMINER

1774